

Attorney Docket No. IMMR-004/01US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Lonny L. CHU

Serial No.: Unassigned

Examiner: TBD

Confirmation No.: Unassigned

Art Unit: TBD

Filed: Herewith

For: **SOUND DATA OUTPUT AND MANIPULATION USING HAPTIC FEEDBACK**

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(b)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56, Applicant(s) hereby submits the following information in conformance with 37 C.F.R. §§1.97 and 1.98.

- Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08 is enclosed.
- No copies of the publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial No. 09/975,320 to which the above-identified application claims priority under 35 U.S.C. §120.
- No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- Publication(s) ____ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ____ application serial no. and mailed on ____.
- Enclosed is a copy of a non-English publication(s) _____. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).
- Enclosed is a copy of a non-English publication(s) _____. English language publication ____ (copy enclosed) claims priority from this non-English publication.

- Enclosed is an explanation of non-English publication(s) _____ for which an English translation is not available.
- Enclosed is an English translation of non-English publication(s) _____ cited in the attached Form PTO/SB/08A.
- Enclosed is a copy of pending patent Application Serial No. _____.

This Information Disclosure Statement is filed within any one of the following time periods:

- within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- within three months from the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in this international application;
- before the mailing date of a first office action on the merits; or
- before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.

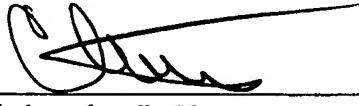
It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: February 20, 2004

Respectfully submitted,
COOLEY GODWARD LLP

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By:


Christopher R. Hutter
Reg. No. 41,087



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SEP 11 2006

PTO/SB/08A (08-00)

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Application Number	Unassigned
Sheet	1	of	4	Filing Date	February 20, 2004
				First Named Inventor	Lonny L. CHU
				Group Art Unit	Unassigned
				Examiner Name	Unassigned
				Attorney Docket Number	IMMR-004/01US

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
A1	6,300,936			Braun et al.	10/09/2001
A2	6,292,170			Chang et al.	09/18/2001
A3	6,285,351			Chang et al.	09/04/2001
A4	6,252,583			Braun et al.	06/26/2001
A5	6,219,034			Elbling et al.	04/17/2001
A6	6,198,206			Saarmaa et al.	03/06/2001
A7	6,161,126			Wies et al.	12/12/2000
A8	6,131,097			Peurach et al.	10/10/2000
A9	6,088,017			Tremblay et al.	07/11/2000
A10	6,005,551			Osborne et al.	12/21/1999
A11	5,984,880			Lander et al.	11/16/1999
A12	5,959,613			Rosenberg et al.	09/28/1999
A13	5,889,672			Schuler et al.	03/30/1999
A14	5,857,986			Moriyasu	01/12/1999
A15	5,844,392			Peurach et al.	12/01/1998
A16	5,816,823			Naimark et al.	10/06/1998
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A21	5,684,722			Thorner et al.	11/04/1997
A22	5,669,818			Thorner et al.	09/23/1997
A23	5,619,180			Massimino et al.	04/08/1997
A24	5,565,840			Thorner et al.	10/15/1996
A25	5,547,382			Yamasaki et al.	08/20/1996
A26	5,466,213			Hogan et al.	11/14/1995
A27	5,405,152			Katanics et al.	04/11/1995
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A29	5,388,992			Franklin et al.	02/14/1995
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A42	5,035,242			Franklin et al.	07/30/1991

¹ Unique citation designation number.

² See attached Kinds of U.S. Patent Documents.

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Sheet

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of

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A43	5,022,407	Horch et al.	06/11/1991
A44	5,019,761	Kraft	05/28/1991
A45	4,937,685	Barker et al.	06/26/1990
A46	4,934,694	McIntosh	06/19/1990
A47	4,930,770	Baker	06/05/1990
A48	4,891,764	McIntosh	01/02/1990
A49	4,794,392	Selinko	12/27/1988
A50	4,713,007	Alban	12/15/1987
A51	4,708,656	de Vries et al.	11/24/1987
A52	4,599,070	Hladky et al.	07/08/1986
A53	4,581,491	Boothroyd	04/08/1986
A54	4,513,235	Acklam et al.	04/23/1985
A55	4,236,325	Hall et al.	12/02/1980
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A57	3,911,416	Feder	10/07/1975
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A59	3,902,687	Hightower	09/02/1975
A60	3,623,064	Kagan	11/23/1971
A61	3,517,446	Corlyon et al.	06/30/1970
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A63	3,220,121	Culter	11/30/1965
A64	3,157,853	Hirsch	11/17/1964

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B1			0 349 086	A1	Stork Kwant B.V.	01/03/1990	
B2			WO 95/02233		Cybernet Systems Corp.	01/19/1995	
B3			WO 02/27705			04/04/2002	

¹ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).² For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.³ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.⁴ Applicant is to place a check mark here if English language Translation is attached.

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3

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Group Art Unit	Unassigned
Examiner Name	Unassigned
Attorney Docket Number	IMMR-004/01US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C1	Baigrie, "Electric Control Loading – A Low Cost, High Performance Alternative," <i>Proceedings of Interservice/Industry Training Systems Conference</i> , pp. 247-254, November 6-8, 1990	
	C2	Iwata, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp. 287-292, 1993	
	C3	Russo, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," <i>MIT Libraries Archives</i> pp. 1-131, May 1990, archived 8/14/90	
	C4	Brooks et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," <i>JPL Publication 85-11</i> , NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985	
	C5	Jones et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); <i>Experimental Brain Research</i> , Vol. 79, No. 1, pp. 150-156, 1990	
	C6	Burdea et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 IEEE International Conference on Robotics and Automation, pp. 25-44, 05/02/1993	
	C7	Snow et al., 'Model-X Force-Reflecting-Hand-Controller,' NT Control No. NPO-17851; JPL Case No. 7348, pp. 1-4 with 45 pages of attachments, 06/15/1989	
	C8	Ouh-Young, "Force Display in Molecular Docking," Doctoral Dissertation, University of North Carolina at Chapel Hill, UMI Order No. 9034744, p. 1-369, 1990	
	C9	Tadros, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators," <i>MIT Archive</i> , pp. 1-88, February 1990, archived 8/13/90	
	C10	Caldwell et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993	
	C11	Adelstein et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 1-12, 1992	
	C12	Gotow et al., "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," WA11-11:00, pp. 332-337	
	C13	Stanley et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 55-61, ASME 1992	
	C14	Russo, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 63-70, ASME 1992	
	C15	Kontarinis et al., "Display of High-Frequency Tactile Information to Teleoperators," <i>Telemanipulator Technology and Space Telerobotics</i> , Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993	
	C16	Patrick et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," <i>Cooperative Intelligent Robotics in Space</i> , Rui J. deFigueiredo et al, Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990	
	C17	Adelstein, "A Virtual Environment System For The Study of Human Arm Tremor," <i>Ph.D. Dissertation</i> , Dept. of Mechanical Engineering, MIT, June 1989, archived 3/13/90	
	C18	Bejczy, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," <i>Science</i> , Vol. 208, No. 4450, pp. 1327-1335, 1980	
	C19	Bejczy et al., "Generalization of Bilateral Force-Reflecting Control of Manipulators," <i>Proceedings Of Fourth CISIM-IFToMM</i> , Sep. 8-12, 1981	
	C20	McAfee et al., "Teleoperator Subsystem/Telerobot Demonstrator: Force Reflecting Hand Controller Equipment Manual," <i>JPL 1988</i> , JPL D-5172	
	C21	Minsky, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," <i>Ph.D. Dissertation</i> , MIT, June 1995, archived 7/6/95	
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	C23	Shimoga, "Finger Force and Touch Feedback Issues in Dexterous Telemanipulation," <i>Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration</i> , Rensselaer Polytechnic Institute, Sep. 30- Oct. 1, 1992	
	C24	IBM Technical Disclosure Bulletin, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990	
	C25	Terry et al., "Tactile Feedback In A Computer Mouse," <i>Proceedings of Fourteenth Annual Northeast Bioengineering Conference</i> , University of New Hampshire, March 10-11, 1988	
	C26	Howe, "A Force-Relating Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," <i>Proceedings of the 1992 IEEE International Conference on Robotics and Automation</i> , Nice, France, May 1992	

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				<i>Complete if Known</i>	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	Unassigned
Sheet	4		4	Filing Date	February 20, 2004
				First Named Inventor	Lonny L. Chu
				Group Art Unit	Unassigned
				Examiner Name	Unassigned
				Attorney Docket Number	IMMR-004/01US

C27	Eberhardt et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," <i>IEEE Virtual Reality Annual International Symposium</i> , Seattle, WA, Sep. 18-22, 1993	
C28	Rabinowitz et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contractor area," <i>Journal of The Acoustical Society of America</i> , Vol. 82, No. 4, October 1987	
C29	Bejczy et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," <i>International Computer Technology Conference, The American Society of Mechanical Engineers</i> , San Francisco, CA, August 12-15, 1980	
C30	Bejczy et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," <i>SOAR '89 Workshop, JSC</i> , Houston, TX, July 25-27, 1989	
C31	Ouhyoung et al., "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," <i>IEEE Transactions on Consumer Electronics</i> , Vol. 41, No. 3, August 1995	
C32	Marcus, "Touch Feedback in Surgery," <i>Proceedings of Virtual Reality and Medicine The Cutting Edge</i> , Sep. 8-11, 1994	
C33	Bejczy, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987	
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C35	Gillespie, B., "The Virtual Piano Action: Design and Implementation," Proc. of Int'l Computer Music Conf. September 1994, pp. 167-170	
C36	Snibbe, S. et al., "Haptic Techniques for Media Control," Proc. of 14 th Annual Symp. On User Interface Software and Technology, UIST 2001, November 2001, pp. 1-10	
C37	MacLean K. et al., "An Architecture for Haptic Control of Media," Proc. of ASME Dynamic Systems and Control Division, <i>Haptic Interfaces for Virtual Environments and Teleoperator Systems</i> , 1999, pp. 1-10	
C38	O'Modhrain, M., "Playing by Feel: Incorporating Haptic Feedback into Computer-Based Musical Instruments," Dissertation, Dept. of Music, Stanford University, November 2000, pp. 1-107	

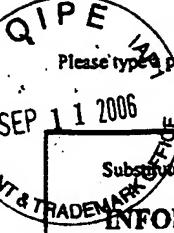
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¹ Unique citation designation number.

² Applicant is to place a check mark here if English language Translation attached.

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PTO/SB/08A (08-00)

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STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	2	of	4	Attorney Docket Number	IMMR-004/01US
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JD	A43	5,022,407	Horch et al.	06/11/1991
JD	A44	5,019,761	Kraft	05/28/1991
JD	A45	4,937,685	Barker et al.	06/26/1990
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JD	A47	4,930,770	Baker	06/05/1990
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JD	A49	4,794,392	Selinko	12/27/1988
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FOREIGN PATENT DOCUMENTS

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		Office ¹	Number ²	Kind Code ³ (if known)			
JD	B1		0 349 086	A1	Stork Kwant B.V.	01/03/1990	
JD	B2		WO 95/02233		Cybernet Systems Corp.	01/19/1995	
JD	B3		WO 02/27705			04/04/2002	

¹ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).² For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.³ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.⁴ Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	/Jeffrey Donels/	Date Considered	05/24/2006
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JD	C17	Adelstein, "A Virtual Environment System For The Study of Human Arm Tremor," <i>Ph.D. Dissertation</i> , Dept. of Mechanical Engineering, MIT, June 1989, archived 3/13/90		
JD	C18	Bejczy, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," <i>Science</i> , Vol. 208, No. 4450, pp. 1327-1335, 1980		
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Substitute for form 1449A/PTO				<i>Complete if Known</i>	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	Unassigned
				Filing Date	February 20, 2004
				First Named Inventor	Lonny L. Chu
				Group Art Unit	Unassigned
				Examiner Name	Unassigned
Sheet	4		4	Attorney Docket Number	IMMR-004/01US

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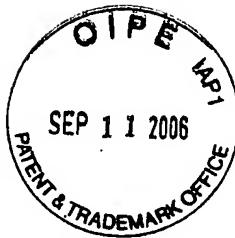
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		Application Number	10/781,918
		Filing Date	February 20, 2004
		First Named Inventor	Lonny L. CHU
		Group Art Unit	Unassigned
		Examiner Name	Unassigned
Sheet	1	of	1
		Attorney Docket Number	
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U.S. PATENT DOCUMENTS

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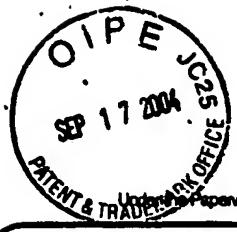
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				Application Number	10/781,918
				Filing Date	February 20, 2004
				First Named Inventor	Lonny L. Chu
				Art Unit	2673
				Examiner Name	Unassigned
				Attorney Docket Number	IMMR004/01US
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		Number	Kind Code ² (if known)			
JD		6,422,941		7/23/2002	Thomer et al.	
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				First Named Inventor	Lonny L. Chu
				Art Unit	2673
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